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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

112740-1141

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name _____

Application Number

10/596,531

Filed

First Named Inventor

Lutz RAPP

Art Unit

3663

Examiner

M. Hellner

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record. 43,148
Registration number _____

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____



Signature

Kevin R. Spivak

Typed or printed name

202.955.7007

Telephone number

January 11, 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Lutz Rapp
Appl. No.: 10/596,531
Conf. No.: 7634
Filed: June 15, 2006
Title: METHOD FOR CONTROLLING THE PUMP POWER OF AN OPTICAL
AMPLIFIER
Art Unit: 3663
Examiner: Mark Hellner
Docket No.: 112740-1141

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pre-Appeal Brief

Sir:

In response to the Final Office Action dated October 11, 2007, Applicant hereby submits this Pre-Appeal Brief along with the attached Notice of Appeal and Extension of Time.

REMARKS

I. The Rejection to 7, 8, 11 and 12 Under 35 USC 102(b) As Anticipated By Feulner Is Improper

Claims 7, 8, 11 and 12 were rejected under 35 U.S.C. §102(b) as being anticipated by Feulner et al. (US Patent 6,366,393). Applicant respectfully traverses this rejection.

Specifically, Feulner fails to teach or suggest the features of “detecting a change in input or output power of all channels, wherein when the change of input power occurs within a time interval that is smaller than a reaction time of the amplifier, the accumulated input and output power is measured, and, using the measured state of gain, a new pump power value is determined so that the gain curve of the amplifier becomes substantially constant” as recited in claim 7.

Feulner discloses an optical amplifier 101 coupled to an optical fiber 105 for receiving a WDM signal comprising individual optical channels where each channel is associated with a particular wavelength (col. 3, lines 58-61). A pump source 110 is used to supply pump power to

excite the gain medium of optical amplifier 101 for amplifying the WDM signal provided as input to optical amplifier 101. According to Feulner, pump control 120 is used for controlling the amount of pump power supplied by pump source 110. By changing the amount of pump power, the amount of gain provided by optical amplifier 101 is controlled (col. 4, lines 5-9).

Feulner teaches that the pump power is controlled and a function of input power and “without knowing the optical output power” (col. 5, lines 37-38). Each of the pumps disclosed in Feulner are associated with a particular wavelength (col. 3, ln. 61), or pump signals emanating from wavelength-selective couplers (207, 208) (see col. 4, lines 47-56). Thus, Feulner does not detect a change in input or output power of all channels, as presently claimed.

The Examiner, in Response to Arguments on page 3 of the Final Office Action dated October 11, 2007, states that Feulner, at col. 5, ln. 18, teaches this feature where it states that photodetector 240 measures the total input power of the WDM signal and is therefore a function of all wavelengths present. Applicants respectfully disagree. The cited disclosure simply does not mention detecting a change in input or output power of all channels. Rather, it simply refers to the detection and measuring of the total input power of the WDM signal, not of detecting a change in input or output power of all channels, as required by the claimed invention.

Furthermore, claim 7 recites that “the change of input power occurs within a time interval that is smaller than a reaction time of the amplifier.” The Office Action points to the fact that Feulner discloses a sub-microsecond time scale (see Abstract) - however, this appears to be a time interval that is not smaller than the reaction time of the amplifier. In col. 6, lines 47-61, Feulner provides:

[T]he important aspect here is that gain can be controlled on a very fast, sub-microsecond basis if needed. That is, pump power can be changed to control the gain of the optical amplifier on a sub-microsecond time scale from the time that a change in input power is detected. One such hardware implementation is shown in FIG. 4. In particular, FIG. 4 shows a simplified block diagram of the operations carried out by circuitry in control element 220 for deriving the appropriate pump power according to the relationship $P_{PUMP} = C_1 + (C_2 \times P_{IN})$. Initially, coefficients C, can be defined based on the particular optical amplifier's characteristics and operating parameters.

In connection with FIG. 6, Feulner discloses an alternate embodiment, which deals with temperature effects (col. 8, lines 1-13), where a slower response is required. Feulner states:

It should be noted, however, that although the basic principles of operation for photodetectors 240 and 703 are very similar, the performance requirements (and thus the particular device used in the system) may be very different. *In particular, photodetector 240 has to react on a sub-microsecond time scale to the "fast" changes in input conditions, while photodetector 703 is measuring "slow" changes which may even be on the order of milliseconds or slower* (col. 8, lines 32-39).

Thus, the reaction time of the amplifier in Feulner is designed to specifically deal with such response times, and as such, the change of input power occurs within a time interval that is consistent with a reaction time of the amplifier, and not smaller.

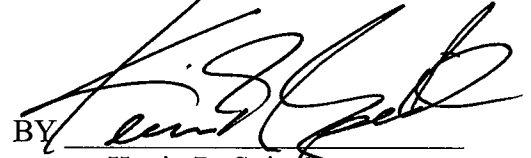
Additionally, the Examiner cites to col. 2, lns. 47-49 of Feulner, in the Response to Arguments on page 3 of the Final Office Action dated October 11, 2007, as disclosing a gain control that can be effected before changes in input power reach the gain medium of the optical amplifier. However, this statement clearly identifies the gain control before change in input power. The claimed invention, on the other hand, specifically requires when the change of input power occurs within a time interval that is small than a reaction time of the amplifier. Hence, even assuming *arguendo* that the gain control in Feulner is effected, it occurs before changes in input power.

For at least these reasons, Applicant submits the rejection under 35 U.S.C. §102 is traversed, and earnestly requests the withdrawal of same. In light of the present amendments and arguments, Applicant respectfully submit that claims 7-13 are allowable.

Applicants respectfully submit that the patent application is in condition for allowance and request a Notice of Allowance be issued. The Commissioner is authorized to charge and credit Deposit Account No. 02-1818 for any additional fees associated with the submission of this Response. Please reference docket number 112740-1141.

Respectfully submitted,

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Dated: January 11, 2008